

AMENDMENTS TO THE CLAIMS

Pursuant to 37 C.F.R. § 1.121 the following listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Currently Amended) A method of sensing the activity of neural tissue, the method comprising the steps of:

placing an electrode in a blood vessel proximate to the neural tissue, said electrode being smaller than 10 μm in diameter; and

monitoring a signal on the electrode by way of a wire connected to the electrode,

wherein the signal is indicative of the electrical brain activity of the neural tissue.

2. (Original) The method of claim 1, wherein the electrode comprises a sensing end, the sensing end of the electrode being placed in the blood vessel proximate to the neural tissue.

3. (Original) The method of claim 1, wherein the electrode is inserted into the blood vessel at a point upstream of a junction with another blood vessel.

4. (Original) The method of claim 3, wherein a sensing end of the electrode is deployed to a point downstream of the junction.

5. (Previously Presented) The method of claim 1, comprising the steps of:

placing a further electrode on the neural tissue proximate to the electrode;

applying a stimulus to the neural tissue;

11. (Original) The device of claim 10 comprising:

a signal processor, the signal processor being arranged in the catheter and being coupled to the electrode.

12. (Original) The device of claim 11, wherein the signal processor includes:

an amplifier, the amplifier being coupled to the electrode; and

a digital converter, the digital converter converting the output of the amplifier into a digital representation.

13. (Original) The device of claim 12, wherein the digital converter includes a Schmitt trigger.

14. (Original) The device of claim 10 comprising a plurality of electrodes.

15. (Original) The device of claim 14 comprising:

a signal processor, the signal processor being arranged in the catheter and being coupled to the plurality of electrodes.

16. (Original) The device of claim 15, wherein the signal processor includes:

a plurality of amplifiers, each of the plurality of amplifiers being coupled to one of the plurality of electrodes;

a plurality of digital converters, each of the plurality of digital converters converting the output of one of the plurality of amplifiers into a binary representation; and

a multiplexer, the multiplexer being coupled to an output of each of the plurality of digital converters and multiplexing the outputs of the digital converters onto an output signal line.

17. (Original) The device of claim 16, wherein each of the electrodes includes a nano-wire and the output signal line includes a micro-wire.

18. (Currently Amended) A method of stimulating neural tissue, the method comprising the steps of:

placing an electrode in a blood vessel proximate to the neural tissue, said electrode being smaller than 10 μm in diameter; and

providing a signal on the electrode by way of a wire connected to the electrode,

wherein the signal stimulates the electrical brain activity of the neural tissue.

19. (Previously Presented) The method of claim 18, wherein the electrode comprises an end, the end of the electrode being placed in the blood vessel proximate to the neural tissue.

20. (Previously Presented) The method of claim 18, wherein the electrode is inserted into the blood vessel at a point upstream of a junction with another blood vessel.

21. (Previously Presented) The method of claim 20, wherein an end of the electrode is deployed to a point downstream of the junction.

22. (Previously Presented) The method of claim 18, wherein the electrode comprises a nano-electrode.

23. (Previously Presented) The method of claim 18, wherein the electrode comprises an array of nano-electrodes.

24. (Previously Presented) The method of claim 23, wherein the nano-electrodes have different lengths.

25. (Previously Presented) The method of claim 22, wherein the nano-electrode comprises a cup-like end.

26. (Previously Presented) The method of claim 1 further comprising the step of stimulating neural tissue by providing a stimulation signal to said electrode.

27. (Previously Presented) The method of claim 1 further comprising the steps of:

placing a second electrode in a second blood vessel proximate to the neural tissue, said second electrode being of sufficiently small size such that it is capable of being inserted into a capillary; and

providing a stimulation signal to said second electrode.

28. (Previously Presented) The device of claim 10 wherein said electrode is operative to provide a stimulation signal to said neural tissue.

